



## Evaluation of Different Varieties of Brinjal (*Solanum Melongena* L.) for Growth and Yield Parameters

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Article History	Abstract
Received: 31 Oct 2023 Revised: 13 Nov 2023 Accepted: 28 Nov 2023	Brinjal, ( <i>Solanum melongena</i> ) is also known as eggplant or aubergine is an important vegetable crop cultivated worldwide belonging to the family Solanaceae. Brinjal is a diploid with chromosome number $2n=24=2x$ . Centre of origin for Brinjal is India. Brinjal has a great genetic variability so the importance of selecting brinjal varieties and genotypes that are well suited to local geographical conditions to maximize the growth and yield. This review article aims to provide a comprehensive analysis of previous research findings concerning about the evaluation of different brinjal varieties and genotypes concerning their growth, yield potential and morphological characteristics. The main objective of this review is to understand the importance of selecting the most suitable varieties and genotypes to improve the production and quality and to estimate the key parameters, including plant height, leaf and flower characteristics, fruit weight, shape, size and yield.
CC License CC-BY-NC-SA 4.0	Keywords- Brinjal, evaluation, genotypes, varieties, growth, yield and morphological characteristics.

### Introduction:

Brinjal (*Solanum melongena* L.) is also known as eggplant or aubergine is an easily and widely cultivated plant belonging to the family Solanaceae. Brinjal is a diploid with chromosome number  $2n=24=2x$ . Brinjal was first originated and domesticated in India and later it was spread to the other parts of the world by Persians and Arabs. It is mostly cultivated and broadly developed in all South East Asian nations, southern Europe, China and Japan. The estimated total world production of brinjal is 58.6 million tones. China is the largest producer of brinjal which accounts about 68.7 percent in the world production while India acquires the second position with share of 23.3 percent. The cultivated area of brinjal in India is 747000Ha and the production is 12982000 MT. The Cultivation of brinjal in India is distributed in almost all states of the country, with highest in west Bengal, followed by Odisha, Gujarat and Bihar.

Brinjal is mainly grown for its edible fruits which are high in nutrition and commonly consumed as a vegetable. Plant is erect, semi erect, herbaceous small plant that grows up to 1.5m. Its leaves are oblong to oval and slightly lobed. Both leaves and stems are covered with small fine hair spines. Flowers are bisexual pentamerous and are solitary. Individual flowers are star shaped with purple light pink or white coloured. There are five stamens attached to the corolla tube and a single superior ovary. The fruit of brinjal is a berry with many seeds and are either long or round shaped and vary in colour according to the variety; white, green, purple or striped.

Brinjal is a rich source of Anthocyanins, vitamins-c and phenolic compounds, which are powerful anti-oxidants (Vinson et al., 1998) and it is a rich source of Flavonoids, alkaloids and other bioactive compounds like arginine, aspartic acid etc. The nutritional value of brinjal per 100gm is carbohydrate (5.88g), protein (0.98g), sugar(3.53g), total lipid(0.18g), fibre (3g), calcium (9mg), Iron (0.23mg), vitamin-c (2.2mg), thiamin (0.039), Riboflavin (0.037mg), niacin (0.64mg), vitamin-B6 (0.084mg).

Brinjal have many medicinal properties and many health benefits. Some of the health benefits present in brinjal are dietary fibers promotes digestion and prevent constipation, phytonutrients in brinjal have anti-cancer properties, as it is a low sodium vegetable, making it suitable for individual with high blood pressure and antioxidants that help to protect against cell damage and reduce the risk of chronic diseases.

Brinjal is a warm season day neutral plant and is susceptible to severe frost. A long and warm growing season with a temperature range 21- 27C is most favorable for growth and development and fruit setting. In India it is adopted to a diverse climatic condition. In hilly regions, it is grown only as summer crop. In north India crop growth is diversely affected by low high temperature during in winter. Brinjal can grow on all types of soil ranging from light sand to heavy clay. Well-drained, leveled and fertile sandy loam soils with 5.5 to 6.6 pH are most suited for better growth and development.

Based on plant spread and fruit shape and size brinjal is divided into four main botanical varieties under the species melongena. The round and egg-shaped varieties are grouped under *S. melongena* var *esculenta*, long and slender fruits (snake eggplant) are under *S. melongena* var *serpentinum*, early and dwarf cultivars are under *S. melongena* var *depressum*, wild and prickly plants with small plants are included under *S. melongena* var *incanum*.

The different varieties and genotypes of brinjal are developed by the genetic improvement the plant through conventional and biotechnology methods. Introduction, Selection and Hybridization approaches have been commonly used in India. The main objective of the crop improvement is the higher yield, resistance to the insects, pests and diseases, shape, size and color. A large no of cultivars differing in size, shape and color of fruits are developed and grown in the country. Because the consumer's preference for shape, size and color of the fruits is varied across the country according to the region and different varieties are used for different purposes.

## **Growth parameters**

### **Plant height:**

Balasubramaniyam *et al.*, (2021) concluded that the maximum height of plant was 107.47 cm compared to other varieties. Timmareddygari *et al.*, (2021) did trail and detected that maximum plant height was 77.40 cm recorded in RCBG-4. Srivastav *et al.*, (2019) did test on brinjal and reported that maximum height of plant was 104.19 cm in IC-136148 genotype compared to all under semi – arid conditions. Verma *et al.*, (2018) carry out trails and find out the general mean of plant height was 64.03 cm. Shitap *et al.*, (2017) concluded that the maximum height of plant was 96.00 cm recorded in AB-11-7. Kumar *et al.*, (2011) reported that the maximum plant height was 117.08 cm compared to other varieties. Choudhary *et al.*, (2023) reported that the maximum height of plant was 118.33 cm recorded in Local check – 1. Sujin *et al.*, (2017) experimented on among varieties that the maximum height of plant was 73.84 cm as recorded. Konyak *et al.*, (2020) concluded and recorded that the maximum height of plant was 81.044 cm reported compared to other varieties. Vidhya *et al.*, (2015) recorded the maximum height of plant was 143.33 cm in IC 374928 genotype variety. Saha *et al.*, (2019) experimented and concluded that the maximum height of plant was 75.78 cm compared to other varieties. Ansari *et al.*, (2011) experimented in Chhattisgarh plains and concluded the maximum height of plant was 120.27 cm among other varieties. Rahul *et al.*, (2017) conducted experiment on Brinjal varieties and concluded that the maximum height of plant was 8.3 cm recorded in Green round variety. Dash *et al.*, (2019) did experiment on Brinjal varieties and concluded the maximum height of plant was 65.13 cm compared to other varieties. Dutta *et al.*, (2018) conducted experiment on brinjal and recorded the maximum height of plant was 129.00 cm in BCB – 40 genotypes. Ramesh *et al.*, (2012) did experiment on brinjal and concluded that the maximum height of plant was 149.97 recorded in Alavayal local variety. Mohanty *et al.*, (2021) concluded and reported the maximum height of plant of brinjal was 91.07 cm compared to other genotypes. Das *et al.*, (2017) conducted experiment on brinjal and reported the maximum height of plant was 108.49 cm recorded in BCB – 16 genotypes. Tripathy *et al.*, (2021) did experiment on brinjal and reported the maximum height of plant was 110.10 cm recorded in BBSR – 10 X BBSR – 195 – 3 of genotype. Madhavi *et al.*, (2015) selected some varieties and did experiment on brinjal and reported the maximum height of plant was 46.07 cm compared to other genotypes. Tirkey *et al.*, (2018) conducted experiment on brinjal and concluded that the maximum height of plant was 69.56 cm of 90 days plant compared to other varieties. Divya *et al.*, (2018) did experiment on brinjal and concluded the maximum height of plant was 91.11 cm reported all among varieties. Malshe *et al.*, (2016) conducted experiment on brinjal and reported the maximum height of plant was 87.77cm recorded in Arka Nidhi genotype variety. Nikitha *et al.*, (2020) concluded that the maximum height of plant was 0.0369 cm compared to other genotypes. Balas *et al.*, (2019) concluded and reported that the maximum height of plant was 95.65 cm recorded compared to other varieties. Chaturvedi *et al.*, (2016) did experiment on brinjal at Allahabad of agro climatic conditions and concluded the maximum height of plant was 83.55 cm recorded in

HBBL – 1 genotype variety. Vidhya *et al.*, (2015) conducted experiment on varieties of brinjal and reported the maximum height of plant was 90.09 cm recorded compared to other varieties. Patel and Chaurasiya (2022) did experiment on brinjal and concluded and reported that the maximum height of plant was 99.11 cm recorded in Mukta keshi genotype. Tripathy *et al.*, (2020) conducted experiment on brinjal and recorded the maximum height of plant was 161.44 cm in Utkal Jyoti variety. Datta *et al.*, (2023) did experiment on brinjal and concluded that the maximum height of plant was 87.83 cm recorded compared to other varieties. Alam *et al.*, (2021) conducted experiment on brinjal and reported the plant height was 76.12 cm all among the other varieties. Kumar *et al.*, (2012) experimented on brinjal concluded and recorded the maximum height of plant was 149.97 cm recorded in Alavayal local variety. Singh *et al.*, (2019) conducted experiment on brinjal and recorded plant height at 30 days was 37.92cm and followed by 60 days was 76.46 cm reported compared to other varieties. Divya *et al.*, (2020) conducted experiment on brinjal at under mid hill conditions of Himachal Pradesh and reported the plant height was 130.47 cm recorded in UHF – BRL – 4 variety. Younas *et al.*, (2022) concluded and reported that the plant height was 62.1 cm recorded in 004729 (01) genotype. Devi *et al.*, (2020) conducted experiment on brinjal and reported the maximum height of plant was 101.6 cm recorded in BRL VAR – 15 genotypes. Rajan *et al.*, (2020) experimented on brinjal and conclude the maximum height of plant was 75.9 cm compared to other varieties. Singh *et al.*, (2020) did experiment on brinjal varieties and reported the maximum height of plant was 143.33 cm recorded in *Solanum torvum* variety. Chaudhary *et al.*, (2017) did experiment on brinjal at under tarai conditions in Uttarakhand and conclude the maximum height of plant was 76.20 cm recorded in Pant Samrat variety. Reddi *et al.*, (2021) did experiment on brinjal varieties under Eastern Plateau of Jharkhand and recorded the plant height of Treatment 1 was 89.05 cm recorded in variety 3 (T<sub>1</sub> is Sasyagavya (10%) and V<sub>3</sub> is Swarna shree), T<sub>2</sub> was 91.60 cm recorded in V<sub>3</sub> (T<sub>2</sub> is Enriched sanjeevani (10%) and V<sub>3</sub> is Swarna shree), T<sub>3</sub> was 68.64 cm recorded in V<sub>2</sub> (T<sub>3</sub> is Untreated control and V<sub>2</sub> Swarna Abhilamb) compared to other varieties. Umamahesh *et al.*, (2018) conducted experiment on brinjal varieties and concluded the plant height was 89.40 cm recorded in CVK genotype. Chen and Li (1995) did experiment on brinjal and concluded that the maximum height of plant was 120 cm recorded compared to other varieties. Gogoi *et al.*, (2018) experimented on brinjal and concluded that the plant height was 79.5 cm recorded in NV 2035 variety. Parida *et al.*, (2020) conducted experiment on brinjal at Laterite belt Eastern India and reported the maximum height of plant was 113.0 cm recorded in Local – 5 variety. Chinthagunti *et al.*, (2018) did experiment on brinjal and reported the plant height was 67.23 cm recorded in BBRHYB – 5 variety. Uddin *et al.*, (2021) conclude and reported the maximum height of plant was 139.57 cm recorded among the other varieties. Mahalakshmi *et al.*, (2022) conducted experiment on brinjal and recorded the plant height was 95.15 cm recorded in CBE- SM- 093 variety. Patel *et al.*, (2018) did experiment and concluded the plant height was 0.4105 cm recorded in PC4 genotype. Bora *et al.*, (2011) conducted experiment on brinjal varieties a reported the maximum height of plant was 41.6 cm recorded in Ustav variety. Madhavi *et al.*, (2015) experimented on brinjal and recorded the maximum plant height was 51.67 cm compared to other varieties.

#### **Leaf area:**

Balasubramaniam *et al.*, (2021) reported and recorded the highest leaf area was 112.76 cm compared to other varieties. Patel *et al.*, (2018) recorded the highest leaf are was 0.3485 cm recorded in PC1 genotype. Madhavi *et al.*, (2015) reported the highest leaf area was 198.70 cm compared to other varieties. Choudhary *et al.*, (2023) did experiment and conclude the highest area of leaf was 45.80 cm among the other varieties. Rahul *et al.*, (2017) recorded the highest area of leaf was 200.0 cm recorded in Green Express variety. Madhavi *et al.*, (2015) reported the maximum area leaf was 176.22 cm compared to the other varieties. Sahu *et al.*, (2022) recorded the leaf area was 14738.33 cm reported in Kashi Taru variety. Kundu *et al.*, (2023) reported the highest leaf area was 76.00 cm compared to other varieties. Uddin *et al.*, (2021) recorded the maximum leaf area was 242.85 cm<sup>2</sup> recorded compared to other varieties.

#### **Number of branches per plant:**

Timmareddygar *et al.*, (2021) reported the greater number of branches per plant count was 11.75 record in RCBG – 7 variety. Srivastav *et al.*, (2019) recorded number of branches per plant count was 14.55 in IC – 136093 variety. Bora *et al.*, (2011) reported that the brinjal plant having the more number of branches per plant was 8.9 count. Verma *et al.*, (2018) recorded the number of branches per plant was 10.19 count. Shitap *et al.*, (2017) recorded that the variety of P4 X P7 (Doli – 5 X PPL-1) is having the more number of branches per plant was 8.47 count. Gurve *et al.*, (2019) did experiment and collected the data of brinjal plant is having number of branches per plant was 6.17 count compared to other varieties. Kumar *et al.*, (2011) reported the maximum number of branches per plant per plant was 4.66 count compared to other genotypes. Sujin *et al.*, (2017) counted the more number of branches per plant was 4.29 recorded compared to other varieties. Konyak *et al.*, (2020) recorded the more number of branches per plant count was 15.57 compared to other varieties.

Vidhya *et al.*, (2015) counted the more number of branches per plant was 12.00 recorded in the variety HD1. Saha *et al.*, (2019) reported the maximum number of branches per plant was 11.80 count compared to other variety. Ansari *et al.*, (2011) did experiment and counted the more number of branches per plant was 10.77 compared to other varieties. Rahul *et al.*, (2017) counted the more number of branches per plant was 8.3 recorded in variety is Green express. Dash *et al.*, (2019) recorded the maximum number of branches per plant was 7.64 was counted compared to other varieties. Dutta *et al.*, (2018) recorded the more number of branches per plant was 5.33 count in the variety is 16/BRL VAR- 3. Kumar *et al.*, (2013) counted the maximum number of branches per plant was 10.94 count recorded in SM-3. Mohanty *et al.*, (2021) reported the maximum number of branches per plant was 8.45 count compared to other varieties. Das *et al.*, (2017) counted the more number of branches per plant was 6.34 compared to other genotypes. Tripathy *et al.*, (2021) recorded the more number of branches per plant was 5.90 in the variety of BBSR -08-2 X Jammusahi local. Madhavi *et al.*, (2015) reported the more number of branches per plant was 10.81 compared to other varieties. Tirkey *et al.*, (2018) counted the more number of branches per plant at 90 days was 14.36 among the other varieties. Arti *et al.*, (2018) recorded the number of branches per plant was 5.31 compared to other genotypes. Nikitha *et al.*, (2020) reported the maximum number of branches per plant was 0.23 recorded compared to other genotypes. Balas *et al.*, (2019) counted the more number of branches per plant was 5.40 recorded compared to other varieties. Chaturvedi *et al.*, (2016) counted the more number of branches per plant was 6.22 recorded in the variety of Oblong white. Sahu *et al.*, (2022) did experiment and counted the more number of branches per plant was 20.20 present in the Kashi taru variety. Vidhya *et al.*, (2015) recorded the maximum number of branches per plant was 9.48 reported compared to other genotypes. Patel and Chaurasiya (2022) did experiment on brinjal and counted the more number of branches per plant was 9.77 is recorded in the variety of Mukta keshi. Tripathy *et al.*, (2020) counted the maximum number of branches per plant was 5.70 recorded in the variety of BBSR-114. Rani Data *et al.*, (2023) recorded the more number of branches per plant was 9.16 reported compared to other varieties. Alam *et al.*, (2021) did experiment and counted the more number of branches per plant was 15.20 compared to other varieties. Kumar and Arumugham (2013) counted the more number of branches per plant was 10.90 recorded in the variety of Sedapatty local. Singh *et al.*, (2019) recorded the more number of branches per plant was recorded in 60 days was 11.02 counted to compare the other varieties. Arti *et al.*, (2020) did experiment and counted the more number of branches per plant was 11.56 recorded in the genotype of UHF- BRL-4. Kunda *et al.*, (2023) recorded the total number of branches per plant was 12.02 recorded compared to other varieties. Rajan *et al.*, (2020) did experiment of varieties and recorded the more number of branches per plant was 6.7 reported compared to other varieties. Devi *et al.*, (2020) counted the more number of branches per plant was 24.77 present in the variety of BRL VAR -12. Singh *et al.*, (2019) recorded the maximum number of branches per plant was 7.13 present in the variety of *Solanum viarum*. Chaudhary *et al.*, (2017) did experiment and counted the number pf branches per plant was 9.20 records in the genotype of PB-305. Chen and Li (1995) did experiment on brinjal varieties and counted the maximum number of branches per plant was 7.4 was recorded compared to other varieties. Parida *et al.*, (2020) counted the more number of branches per plant was 12.8 recorded in the variety of brinjal is Pusa Anupam. Chinthagunti *et al.*, (2018) experimented on the brinjal verities which was counted the more number of branches per plant was 7.60 recorded in the variety of Swarna mani black. Mahalakshmi *et al.*, (2022) experimented on the brinjal genotypes and collected the more number of branches per plant 7.7 was present in the genotype of CBE- SM -006.

## Flower parameters

### Days to first flowering (DFF):

Timmareddy *et al.*, (2021) did experiment on brinjal and collected the data of first flowering was 44.67 days recorded in the genotype of RCBG – 6. Srivastava *et al.*, (2019) conducted the experiment collected the data of first flowering was 54.67 days recorded in the variety of IC- 136184. Verma *et al.*, (2018) reported that the first flowering was started at the time of 44.13 days compared to other varieties. Gurve *et al.*, (2019) reported that the varieties have taken which the first flowering was started at the time of 55.28 days compared to other varieties. Sujin *et al.*, (2017) reported the first flowering time was started at the time of 32.31 days compared to other genotypes. Saha *et al.*, (2019) did experiment and collected the data of first flowering was started at the time of 120.80 days compared to other varieties. Ansari *et al.*, (2011) conclude and reported the data which the first flowering was started at the time of 47.71 days among other varieties. Rahul *et al.*, (2017) experimented on the growth parameters and collected the data of first flowering of brinjal plant was 39.7 days recorded in the variety of Tal begum. Dutta *et al.*, (2018) they reported the data which the brinjal plant having the first flowering was started at the time of 51.00 days in the genotype of 16/ BRL VAR -4. Kumar *et al.*, (2012) concluded and reported the data which was provided the first flowering was started at 81.50 days recorded in the variety of karipatty local and sedapatty local (Ramakkai Blue). Mohanty *et al.*, (2021) conducted experiment and reported the time of first flowering time was 58.68 days compared to other varieties. Tripathy

*et al.*, (2021) collected the data of first flowering time 59.30 days at the time of experiment which was recorded in the genotype of Jammusahi local. Tirkey *et al.*, (2018) did experiment and concluded that the first flowering was started in the time of 45.09 days compared to other varieties. Nikitha *et al.*, (2020) experimented and reported the time of first flowering was 0.2431 recorded compared to other varieties. Umesh *et al.*, (2018) conducted experiment on brinjal and reported the time of first flowering started at 55.00 days recorded in the variety of Swarna Shree. Patel and Chaurasiya (2022) did experiment on some brinjal varieties and collected the data of first flowering time was 48.33 days which recorded in the variety of pant Samrat. Tripathy *et al.*, (2020) conclude that the data of first flowering was started at 64.30 days recorded compared to other varieties. Dutta *et al.*, (2023) recorded the first flowering time was 60.67 days compared to other varieties. Alam *et al.*, (2021) collected the data of first flowering time was 49.40 days recorded compared to other genotypes. Kumar and Arumugham (2018) did experiment on brinjal genotypes and recorded the first flowering time was started at the time of 85.00 days recorded in the genotype of EP28. Uddin *et al.*, (2021) did trial on the brinjal and collected the first flowering time was started at 80.5 days followed by other varieties. Mahalakshmi *et al.*, (2022) did investigation on the brinjal plant and recorded the first flowering was 51.2 days which was reported in the growth parameters.

#### **Days to 50% flowering:**

Balasubramaniyam *et al.*, (2021) recorded the data 50% flowering started at 65.44 days compared to other varieties. Timmareddygari *et al.*, (2021) reported the 50% of flowering was started to the time of 47.67 days recorded in the genotype of RCBG-6. Srivastava *et al.*, (2019) did trial on the brinjal and recorded the data of 50% flowering was started at the time of 57.67 days recorded in the variety of IC – 136184. Madhavi *et al.*, (2015) did experiment and collected the data of 50% flowering time was 68.11 days particularly in plant compared to other varieties. Verma *et al.*, (2018) concluded the 50% flowering was started in the one particular brinjal was 50.84 days compared to other genotypes. Shitap *et al.*, (2017) collected the which is the 50% flowering started at the time of 91,67 days recorded in the variety of P4 X P10 ( Doli -5 X GP-180). Gurve *et al.*, (2019) reported the 50% flowering started in the brinjal was 73.50 days compared to other genotypes. Kumar *et al.*, (2011) recorded the 50% flowering was started in the time of 58.76 days compared to other varieties. Konyak *et al.*, (2020) which did experiment on brinjal varieties and recorded the 50% of flowering was started at the time of 65.14 days compared to other varieties. Mahalakshmi *et al.*, (2022) reported the 50% flowering was started the time of 60.02 days after plant the brinjal crop which recorded in the genotype of CBE – SM – 108.

#### **Yield parameters:**

##### **Fruit length:**

Balasubramaniyam *et al.*, (2021) did experiment on brinjal recorded the highest fruit length was 24cm compared to other varieties. Srivastava *et al.*, (2019) reported the maximum length of fruit was 16.90 cm recorded in IC 136196 variety. Patel *et al.*, (2018) conducted experiment and collected the maximum length of fruit was 0.4783 cm recorded in the genotype of PC4. Bora *et al.*, (2011) did experiment and collected the highest fruit length of brinjal plant was 12.3 cm recorded in the SM- 6-6 (c). Verma *et al.*, (2018) did experiment and conclude the maximum length of the fruit was 14,26cm recorded compared to other varieties. Shitap *et al.*, (2017) did experiment collect the data of fruit length was 21.80 cm compared to other varieties. Kumar *et al.*, (2011) reported the maximum fruit length was 15.41 cm compared to other varieties. Sujin *et al.*, (2017) conducted the experiment and reported the highest fruit length was 8.14 cm recorded compared to other varieties. Konyak *et al.*, (2020) collected the highest data of fruit length was 11.64 cm compared to other varieties. Tirkey *et al.*, (2018) did experiment on brinjal and collected the data of highest fruit length was 10.92 cm recorded compared to other genotypes. Mahalakshmi *et al.*, (2022) did experiment on brinjal and collected the highest data of fruit length was 13.81 cm recorded in the variety of CBE- SM- 083.

##### **Fruit diameter:**

Balasubramaniyam *et al.*, (2021) did experiment and collected the data of fruit diameter was 17.66cm recorded compared to other varieties. Verma *et al.*, (2018) concluded and reported the brinjal variety having the highest fruit diameter was 5.33 cm compared to other varieties. Kumar *et al.*, (2011) did experiment on brinjal and reported the highest fruit diameter was 15.41cm compared to other varieties. Saha *et al.*, (2019) conducted experiment and reported that one variety having highest fruit diameter was 71.23 mm recorded compared to other varieties. Dutta *et al.*, (2018) recorded the highest fruit diameter was 12.00cm recorded in the variety of

16/BRL VAR -8. Madhavi *et al.*, (2015) collected the highest fruit diameter was 5.78 cm compared to other varieties. Chaturvedi *et al.*, (2016) did experiment on brinjal and collected the highest fruit diameter was 6.59 cm recorded in variety of Punjab hybrid round (Surabhi). Datta *et al.*, (2023) collected the highest data of fruit diameter was 7.71 cm compared to other varieties. Chaudhary *et al.*, (2017) did experiment and collected the highest fruit diameter which having 24.52cm recorded in the variety of PB-305.

#### **Number of fruits per plant (kg):**

Balasubramaniyam *et al.*, (2021) did experiment on brinjal and collected the maximum fruit yield per plant was 2.42 kg recorded. Srivastava *et al.*, (2019) did experiment and recorded the highest fruit yield per plant was 2.77 kg recorded in the variety of IC- 212426. Patel *et al.*, (2018) recorded and conclude that the maximum fruit yield per plant was 0.2619 kg recorded in the variety of PC6. Verma *et al.*, (2018) did experiment and collected the data of brinjal variety having the highest fruit yield per plant was 1.2 kg compared to other genotypes. Shitap *et al.*, (2017) collected the data and reported that highest fruit yield per plant was 6.12 kg recorded compared to other varieties. Kumar *et al.*, (2011) did experiment on brinjal ad collected the data of fruit yield per plant was 1.79 kg recorded compared to other varieties. Vidhya *et al.*, (2015) collected the data of brinjal plant which having the highest fruit yield per plant was 3.68 kg recorded in the variety of HD1. Dash *et al.*, (2019) did experiment on brinjal and concluded that having the highest fruit yield per plant was 4.82 kg recorded compared to other varieties. Dutta *et al.*, (2018) did experiment on brinjal and concluded that having the highest fruit yield per plant was 3.02 kg recorded in the variety of 16/BRL VAR -40. Kumar *et al.*, (2012) did experiment on brinjal and concluded that having the highest fruit yield per plant was 1.83 kg recorded in the variety of EP3. Mohanty *et al.*, (2021) did experiment on brinjal and concluded that having the highest fruit yield per plant was 1.89 kg recorded compared to other varieties. Madhavi *et al.*, (2015) did experiment on brinjal and concluded that having the highest fruit yield per plant was 1.17 kg recorded compared to other varieties. Arti *et al.*, (2018) did experiment on brinjal and concluded that having the highest fruit yield per plant was 0.59 kg recorded compared to other varieties. Malshe *et al.*, (2016) did experiment on brinjal and concluded that having the highest fruit yield per plant was 0.90 kg recorded in the variety of CHES – 309. Nikitha *et al.*, (2020) did experiment on brinjal and concluded that having the highest fruit yield per plant was 0.0382 kg recorded compared to other varieties. Balas *et al.*, (2019) did experiment on brinjal and concluded that having the highest fruit yield per plant was 1.85 kg recorded compared to other varieties. Chaturvedi *et al.*, (2016) did experiment on brinjal and concluded that having the highest fruit yield per plant was 2.44 kg recorded in the variety of JNDBH -1. Vidya *et al.*, (2015) did experiment on brinjal and concluded that having the highest fruit yield per plant was 3.17 kg recorded compared to other varieties. Kumar and Arumugham *et al.*, (2012) did experiment on brinjal and concluded that having the highest fruit yield per plant was 1.93 kg recorded in the variety of EP 27. Kuda *et al.*, (2023) did experiment on brinjal and concluded that having the highest fruit yield per plant was 7.65 kg recorded compared to other varieties. . Gogoi *et al.*, (2018) did experiment on brinjal and concluded that having the highest fruit yield per plant was 2.31 kg recorded in the variety of Utkal green. Chinthagunti *et al.*, (2018) did experiment on brinjal and concluded that having the highest fruit yield per plant was 2.60 kg recorded in the variety of BRR HYB – 4. Uddin *et al.*, (2021) did experiment on brinjal and concluded that having the highest fruit yield per plant was 10.57 kg recorded compared to other genotypes. Mahalakshmi *et al.*, (2022) did experiment on brinjal and concluded that having the highest fruit yield per plant was 2.73 kg recorded in the variety of CBE-SM-006 and CBE-SM-104.

#### **Fruit weight (cm):**

In the variety of IC – 230589 and IC – 135997 are recorded the highest in the fruit weight was 0.15 kg then did experiment by the Srivastava *et al.* (2019). The highest fruit was recorded in the variety of Brinjal was PC1 and the recorded weight was 0.4116 kg did trail by Patel *et al.*, (2018) The trail was recorded by the Bora *et al.*, (2011) and reported that the highest fruit weight was 52.6 g in the genotype was Utsav. Madhavi *et al.*, (2015) did experiment on the genotype of brinjal that she concluded that the highest weight was 192.66 g recorded compared to other varieties. The highest fruit weight was recorded in the brinjal variety was 78.89 g and trail did by Verma *et al.*, (2018). In the brinjal variety of GBL-1 X KS – 331 crossed and recorded the highest fruit weight was 107.33 kg this trail was done by Shitap *et al.*, (2017) on brinjal crop. The Gurve *et al.*, (2019) did test and concluded that the highest fruit weight was 86.98 g compared to other variety. The highest fruit weight was 174.92 g this was recorded by the Kumar *et al.*, (2011) compared to other varieties.

#### **Fruit Girth (cm):**

The recorded highest fruit girth was 5.13 cm recorded in brinjal varieties compared to other varieties these trails did by Sujin *et al.*, (2017) on the brinjal varieties. In the variety of IC – 261884 recorded the highest fruit girth was 17.83cm in the experiment of brinjal did by Vidhya *et al.*, (2015). Ansari *et al.*, (2011) did

investigation on brinjal and recorded the data of highest of fruit girth was 5.40 cm among other varieties. Dash *et al.*, (2019) did trail on brinjal genomes and recorded the highest fruit girth was 13.6 cm compared to other varieties. Among the all varieties of brinjal the highest fruit girth recorded was 20.99cm and did this experiment by Mohanty *et al.*, (2021).

### Conclusion:

In conclusion, this review emphasizes the evaluation of different genotypes and varieties of brinjal for growth, yield, and morphological characters have been the subject of extensive research and the diverse characteristics and performance of brinjal cultivars. In this review the key aspects evaluated are plant height, leaf area, no of branches per plant, flowering aspects, fruit girth, weight, no of fruits per plant(kg), diameter, length. Researchers have demonstrated that the choice selection of brinjal genotype or variety can significantly impact growth and yield. These evaluations have revealed that certain genotypes exhibit superior adaptability to varying conditions, leading to increase yield potential and selecting the cultivars with desirable morphological traits such as fruit size, shape, and colour to ensure market demands and consumer preference.

It has been noted how important it is select region-specific choices because cultivars that grow in one environment may not perform at their best in another. This indicates the need for specialized research and adaptation to ensure the best yield and quality. It is an important contribution to the evolution of brinjal cultivation has been achieved by evaluating various genotypes and cultivars of brinjal for growth, yield, and morphological traits and to select the cultivars that will promote sustainable and fruitful brinjal cultivation.

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